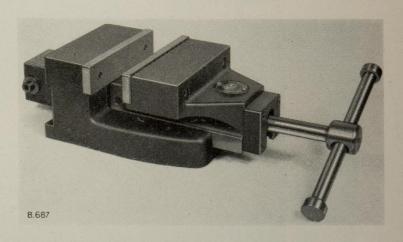
SMALL TOOL DEPARTMENT

### QUICK-ACTING MACHINE VICE

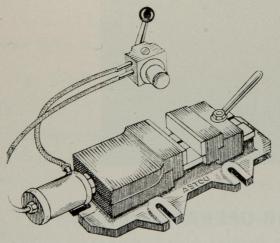
This vice, made specially for use on drilling machines, is useful on milling or planing machines.

The screw can be lifted out of engagement with the nut, the sliding jaw then being instantly moveable into any position.



Renewable steel jaws are furnished with the vice which is confidently recommended where a powerful yet compact tool is required.

Width of jaws	 	 6"	Maximum jaw opening 4"
Depth of jaws	 	 $1\frac{1}{2}''$	Each £10 1 0



# AIR-OPERATED MACHINE VICE

Base dimensions			$14\frac{1}{2}'' \times 6''$
Height			$3\frac{1}{2}''$
Width of jaws			4"
Depth of jaws			$1\frac{3}{8}''$
Maximum jaw open out working jaws	ning (w	ith- 	$3\frac{5}{8}''$
Release movement	of jaws		$\frac{5}{16}$ "
Approx. pressure of jaws on 80 lbs. air l	exerted ine	on 	3100 lbs.

Exhausting capacity of cylinder per stroke	 	$4\frac{1}{2}$ cu. ins.
Total weight	 	28 lbs.

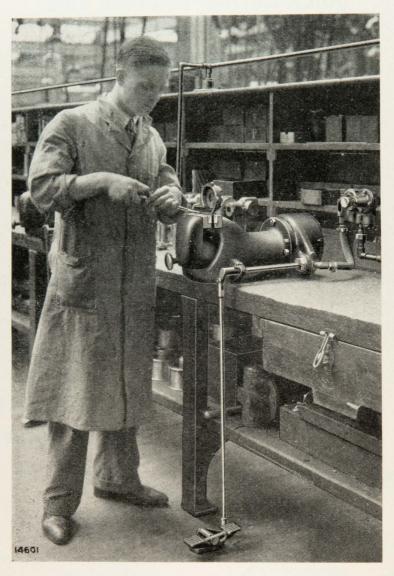
#### PRICES

For 1 or 2 vices ordered at one time	 	 £51	5	6
For 3 to 6 vices ordered at one time	 	 50	4	6
For 7 to 12 vices ordered at one time		 49	4	6

These vices can be made in any size from 2" to 8" jaw width to customers' requirements—

Prices on application.

A.H. MANUFACTURE SUNDRIES DEPARTMENT



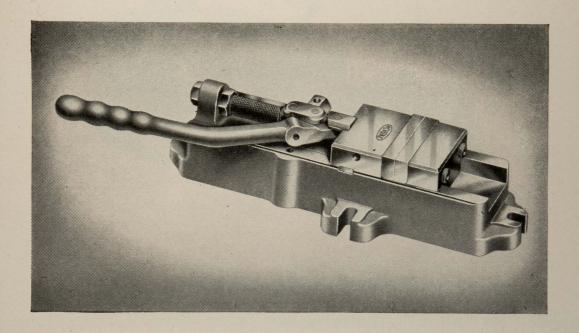
Herbert Air-operated Bench Vice with foot control.

## HERBERT PATENT AIR-OPERATED VICES

Operates on the same principle as the Herbert Air Chucks shown on page s.r.94.

**Bench Type,** with foot control. Adjustable jaw can be moved instantly to give any jaw opening up to maximum. Foot control avoids necessity. of laying down tools to operate vice—a great saving on short operation work

Width of jaws								41"
Maximum jaw opening								$\frac{51''}{52''}$
Approximate nett weight								
Each, with foot operated								
lubricator, air filter, r	educing	g valve	and pr	essure	gauge	£34	0	0
For further parti	culars,	see Cat	alogue	Sheet	No. Y1	736.		



### ADJUSTABLE QUICK-GRIP MACHINE VICE

For quick handling of a large number of pieces, this vice is invaluable. Jaws close tight or open with  $\frac{3}{4}$  movement by one push or pull of the lever.

The toggle lever ensures rigid clamping of the work and reduces fatigue. Ideal for female labour.

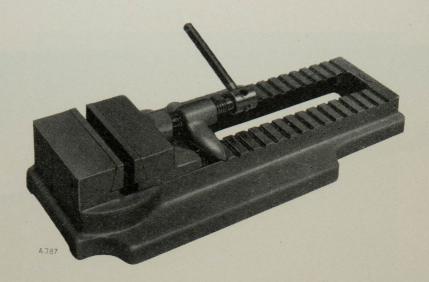
The operating handle, with non-slip grip, is readily adjustable for right- or left-hand horizontal or vertical movement to suit alternative positions of the vice.

The movement of two hexagon nuts adjusts the vice to take various sizes of work.

Jaws open wide for easy removal of work and clearing away swarf. There are no traps for swarf in the jaw slides.

In milling, the thrust of the cut is against the fixed jaw, ensuring rigidity and absence of vibration. The base, of close grained cast-iron, has four slotted feet for  $\frac{1}{2}$ " diameter holding down bolts, and two tenon slots for accurate location.

Max. Capacity	Width of jaws	Depth of jaws	Overall length	Overall width	Approximate weight	Price		Blanks per Set of Two
2"	$3\frac{1}{2}''$	$1\frac{1}{16}''$	16"	$6\frac{3}{8}''$	33 lbs.	£12 15	0	18 9



### TAYLOR MACHINE VICES

This is the original Taylor Machine Vice, and is suitable for use on planing, shaping, drilling and milling machines.

The position of the loose jaw is instantly adjustable to the full capacity of the vice, and when tightened pulls the work down squarely on to its packings. The cylindrical section of the lower part of the loose jaw enables it to adjust itself to any irregularity in the parallelism of the work. This feature also facilitates the gripping of tapered work.

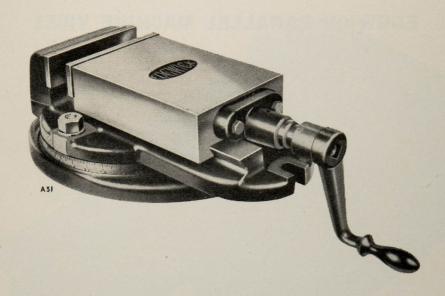
Work can be cut or drilled below the bottom of the jaw without damaging any part of the vice, as would be the case if this was attempted using an ordinary vice.

Standard vices are supplied without end flanges, but if they are required vices can be made to order incorporating them.

Serrated jaws are fitted unless ordered smooth.

These vices are made in five sizes, as follows:

Width of jaw	 3"	4"	5"	6"	8"
Depth of jaw	 $1\frac{3}{16}''$	$1\frac{1}{2}''$	$1\frac{3}{4}''$	2"	2"
Takes between jaws	 7"	9"	11"	$13\frac{1}{4}''$	18"
Height	 $2\frac{15}{16}''$	$3\frac{1}{4}''$	$3\frac{7}{8}''$	41"	5"
Length	 $13\frac{1}{2}''$	$16\frac{1}{2}''$	19½"	23"	29"
Width	 7"	$8\frac{1}{2}''$	$9\frac{1}{2}''$	101/	$15\frac{1}{2}''$
Approx. weight lbs.	 22	36	62	94	156
Price	 £6 0 0	£7 10 0	£10 0 0	£13 10 0	£21 10 0



### **EDGWICK PARALLEL MACHINE VICES**

Particularly suitable for precision work on milling, shaping and drilling machines and also for the tool room. The sliding jaw runs on vee slides and is fitted with adjusting strip for wear and has long bearing surfaces. This makes it impossible for the jaw to lift and tilt the job, the work being held dead square without any packing or tapping down. Fitted with totally enclosed hardened screw. Jaws are of ground tool steel and the nut of phosphor bronze.

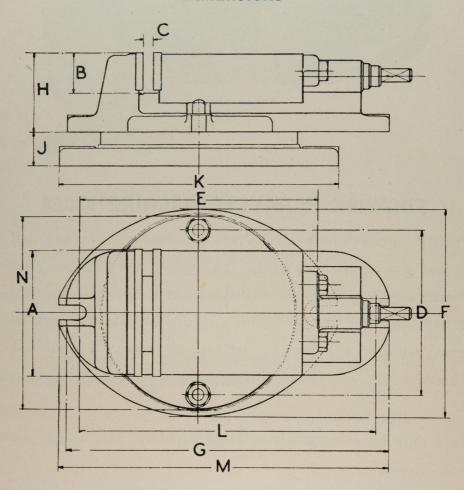
Vices are of robust construction, large capacity, low height with entire absence of "spring".

**Two types:** Plain type or with graduated swivel base; the plain vices have additional holding-down lugs at each end. Each vice is supplied with a crank handle and fitted with hardened detachable tenon for quick setting.

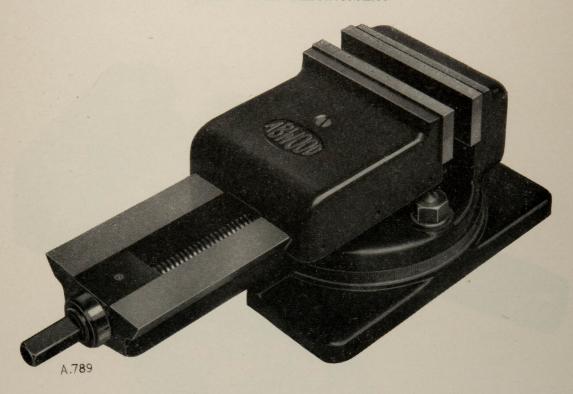
Width	Approximate	Approximate			Each			
of jaws	weight with base lb.	weight without base lb.	with	gradı zel ba			plain	n
3"	22	15	£9	19	0	£7	1	0
4"	35	25	11	16	0	8	13	0
$4\frac{1}{2}''$	52	33	13	12	0	9	9	0
6"	90	64	17	2	0	13	13	0
6"	100	74	18	18	0	15	9	0
8"	157	120	32	11	0	24	3	0
12"	317	320	53	5	0	44	2	0

## **EDGWICK PARALLEL MACHINE VICES**

#### **DIMENSIONS**



PLAIN VICES								SWIVEL VICES									
of Vice	A	В	С	D	G	Н	L	N	A	В	С	Е	F	Н	J	K	M
3"	$3\frac{3}{16}''$	$1\frac{5}{8}''$	2"	4"	$9\frac{5}{8}''$	3 16"	83"	$4\frac{7}{8}''$	3 3 "	$1\frac{5}{8}''$	2"	$6\frac{1}{4}''$	$5\frac{3}{8}''$	3 1 "	11/8"	71"	97"
4"	$4\frac{3}{16}''$	$1\frac{5}{8}''$	$2\frac{3}{4}''$	5"	$11\frac{3}{8}''$	3 1 "	$10\frac{1}{4}''$	61"	$4\frac{3}{16}''$	$1\frac{5}{8}''$	$2\frac{3}{4}''$	8"	$6\frac{3}{4}''$	3 1 "	14"	91"	$11\frac{7}{8}''$
$4\frac{1}{2}''$	4 11 "	$1\frac{5}{8}''$	3"	6"	$12\frac{3}{4}''$	$3\frac{7}{16}''$	$11\frac{5}{8}''$	$7\frac{3}{8}''$	4 11 "	$1\frac{5}{8}''$	3"	$9\frac{1}{2}''$	81"	$3\frac{7}{16}''$	$1\frac{1}{2}''$	11 1 "	$13\frac{1}{4}''$
6"	$6\frac{3}{16}''$	$1\frac{7}{8}$ "	5"	8"	$15\frac{7}{8}''$	$3\frac{3}{4}''$	$14\frac{5}{8}''$	$9\frac{5}{8}''$	6 3 "	$1\frac{7}{8}''$	5"	$11\frac{3}{4}''$	$10\frac{1}{8}''$	$3\frac{3}{4}''$	$1\frac{5}{8}''$	$13\frac{3}{4}''$	$16\frac{1}{4}''$
$6\frac{1}{2}''$	$6\frac{3}{16}"$	17"	$6\frac{1}{2}''$	8"	$17\frac{3}{8}''$	$3\frac{3}{4}''$	$16\frac{1}{8}''$	95"	6 3 "	$1\frac{7}{8}''$	$6\frac{1}{2}''$	$11\frac{3}{4}''$	$10\frac{1}{8}''$	$3\frac{3}{4}''$	15"	$13\frac{3}{4}''$	$17\frac{3}{4}''$
8"	8 3 "	2"	8"	95"	$21\frac{7}{8}''$	37"	$20\frac{3}{8}''$	$11\frac{1}{2}''$	$8\frac{3}{16}''$	2"	8"	$13\frac{3}{4}''$	$12\frac{3}{4}''$	$3\frac{7}{8}''$	$1\frac{3}{4}''$	$15\frac{5}{8}''$	22"
12"	$12\frac{1}{4}''$	25"	12"	14"	$28\frac{3}{8}''$	51"	$26\frac{5}{8}''$	$15\frac{3}{4}''$	121"	$2\frac{5}{8}''$	12"	_	141"	51"	17"	17"	247"



### ABWOOD TYPE P VICES

Specially designed for use on the shaping machine, but is suitable for all accurate work.

The sliding jaw runs on vee slides so that it cannot lift and tilt the work. It is actuated by a hardened steel square thread screw and a large bronze nut.

A drop forged crank handle is supplied with each vice.

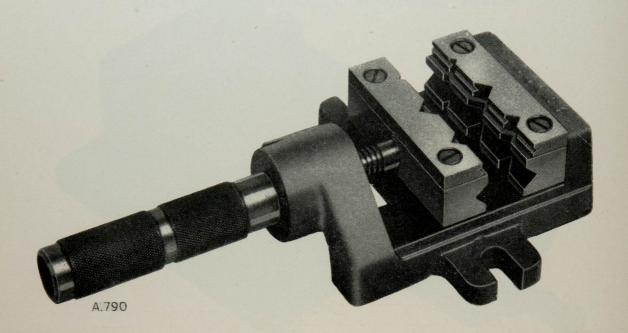
The jaws are made of ground tool steel, and mechanite castings are used throughout for strength and stability.

The base is accurately graduated fully through  $360^{\circ}$ 

The appearance of the vice is enhanced by its first-class finish and low height.

They are made in four sizes:—

Width of jaw	Depth of jaw	Takes between jaws	Approximate weight	1	Price	
$6\frac{1}{2}''$	2"	7"	80 lbs.	£20	4	0
8"	$2\frac{1}{8}''$	9"	131 lbs.	33	6	0
12"	3"	12"	281 lbs.	53	5	0
15"	$3\frac{1}{2}''$	15"	425 lbs.	61	19	0



### UNIVERSAL VICE

A small, compact and exceedingly useful tool for various drilling, milling and planing operations. Articles such as small washers, rings, bushes, rollers, shaftings, screws or taper splines being handled with equal facility.

Specially suitable for small work which cannot be held in position sufficiently tight by hand and where convenient holders are not available. Vice is also suitable for repetition work on shaping, milling and drilling machines.

If fixed on a bench by means of two screws, it will serve as an ordinary vice with the additional advantage of handling work which could not be dealt with by the ordinary type.

Material.—Frame is of best malleable cast-iron, with screw and jaws of hardened steel.

Workmanship.—A sound, accurate engineering job. Screw has a square thread.

Width of jaws  $3\frac{1}{4}''$ 

Length of Gap  $1\frac{1}{2}''$ 

Each £2 2 6



### THE ABWOOD UNIVERSAL MACHINE VICE

Accurate indexing of angular work from 0— $90^{\circ}$  is one of several important features incorporated in the design of the Abwood Universal Machine Vice.

This vice is of first-class appearance, low height and robust construction, thus ensuring maximum rigidity.

The jaws hold the work dead square without the need of packing or tapping. Lifting or tilting is prevented, as the sliding jaw moves along a precision ground "vee" slide.

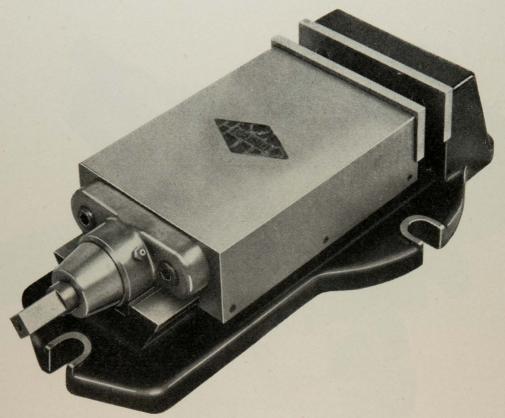
The jaws are of ground tool steel.

The base is accurately graduated throughout  $360^{\circ}$ . Setting arrangements are simple, and include positive clamping.

A drop forged crank handle is supplied with each vice.

The vice is made in two sizes.

Width of jaws	 	 	4"	6"
Depth of jaws		 	$1\frac{1}{2}''$	$1\frac{3}{4}''$
Between jaws		 	3"	5"
Overall height		 	$5\frac{3}{4}''$	7"
Price, each	 	 	£34 13 0	£50 2 0



### HYLO TWO-SPEED VICE

One of the problems in the design and manufacture of a machine vice is to decide on a suitable pitch for the thread of the operating screw. Too fine a pitch will result in a good grip but very slow operation whereas a coarse pitch provides for fast operation with a low grip on the work-piece. This latter usually results in the operator belabouring the handle of the vice with a hammer or mallet.

A recent development is the new Hylo Two-speed Vice which, as its name implies, has two speeds, the high for rapid advance and return of the moving jaw and the low for providing the essential grip on the work-piece. The change-over is entirely automatic and is obtained by a differential mechanism\* incorporated in the design.

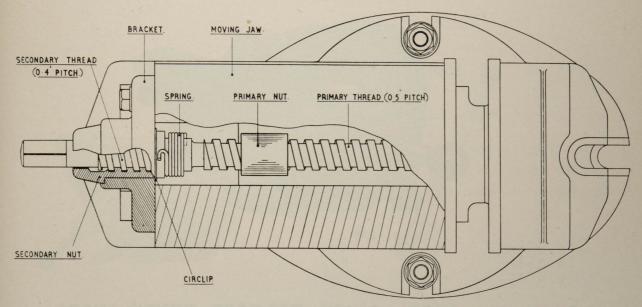
The Hylo Two-speed Vice is five times faster in operation than the conventional screw vice and also overcomes the compromise on thread pitches.

The differential mechanism, shown in S.T. 393, consists of a common shaft on which there are two threaded portions of different pitch known as the primary and secondary threads, the pitch of the primary thread being 0.5'' and that of the secondary thread 0.4''. Fixed to the base casting is the primary nut through which the shaft is screwed. The secondary nut is screwed on to the secondary thread until it abuts the plain portion between the two threads and is held firmly in this position by a pre-loaded spring. One end of the spring is attached to the secondary nut and the other end to the shaft. Thus when the shaft is turned it will be screwed through the primary nut carrying the secondary nut with it.

<sup>\*</sup> Patent applied for.

SMALL TOOL DEPARTMENT

#### HYLO TWO-SPEED VICE—cont.



Section through the Hylo Two-speed Vice showing the patent differential mechanism.

The secondary nut is free to revolve in a bracket bolted to the rear of the moving jaw. Its lateral movement, however, is restricted in the forward and backward directions respectively, by a flange on the nut which is in contact with the rear face of the bracket and a circlip adjacent to the front face of the bracket.

It will now be appreciated that when the handle is turned in a clockwise direction the moving jaw will advance at the rate of 0.5'' per revolution.

Immediately the jaw makes contact with the work-piece the pressure between the flange of the secondary nut and the rear face of the bracket, builds up to overcome the energy of the pre-loaded spring when the nut will cease to revolve in the bracket. Continued operation of the handle will screw the shaft through both nuts and due to the difference between the pitches the moving jaw will be found to advance at the rate of 0.1'' per revolution, thereby giving considerable mechanical advantage at the handle.

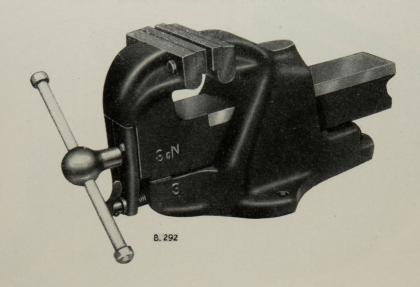
This speed change is entirely automatic.

When the vice is opened, after approximately one quarter of a turn of the handle the jaw will return at 0.5'' per revolution.

The moving jaw runs on 60° ways which will not allow it to lift or tilt and each vice is supplied with a drop-forged steel handle.

The bases of all models are drilled and reamed to accommodate tenons and all vices are bored to take a swivel base. A customer who has purchased a plain vice can convert it to a swivel vice simply by purchasing the swivel base.

Size		$4\frac{1}{2}''$			6"			8"	
Actual width of jaws		$4\frac{3}{4}''$			$6\frac{1}{4}''$			81"	
Depth of jaws		15/			2"			$2\frac{1}{8}''$	
Jaw opening		3"			6"			8"	
Price—Plain	£10	0	0	£15	10	0	£23	10	0
Price—Swivel	14	5	0	20	6	0	30	10	0



### AJAX ALL STEEL QUICK RELEASE BENCH VICES

For long life and satisfactory service. Buttress thread screw and nut provide for hard wear. These vices carry an unqualified guarantee against breakage.

No.	Width of Jaws	Depth of Jaws	Jaw opening	Weight	Е	Cach		Swivel	Ba	se
1	$4\frac{1}{2}''$	3"	5"	46 lbs.	£8	5	0	£1	8	0
2	$5\frac{1}{4}''$	$3\frac{1}{2}''$	6"	54 lbs.	9	10	0	1	10	0
3	6"	$3\frac{3}{4}''$	7"	74 lbs.	12	0	0	1	18	0

## FORTIS QUICK RELEASE STEEL VICES

Similar in design to the Ajax Vices listed above.

No. 10	Width of Jaws $4\frac{1}{2}''$	Depth of Jaws 3"	Jaw opening 5"	Weight 46 lbs.	Eac £8	h <b>5 0</b>	Swiv e £1	xtra	ase 0
11	$5\frac{1}{4}''$	$3\frac{1}{2}''$	6"	54 lbs.	9 1	0 0	1	10	0
12	6"	$3\frac{3}{4}''$	7"	74 lbs.	12	0 0	1	18	0
13	7"	4"	8"	86 lbs.	14	0 0	2	2	0
14	8"	$4\frac{1}{2}''$	9"	100 lbs.	17 1	0 0	2	6	0
15	9"	6"	12"	140 lbs.	32 1	0 0			

# "FORTIS" NEW DESIGN STEEL VICES

#### OFFSET TYPE



Grips long vertical work easily and securely without fouling the body or the ram casting and will withstand exceptional strain. Three sizes:

No.	Width of Jaws	Ea	ach	
10/0	$4\frac{1}{2}''$	£12	0	0
11/0	$5\frac{1}{4}''$	14	5	0
12/0	$6^{''}$	17	5	0

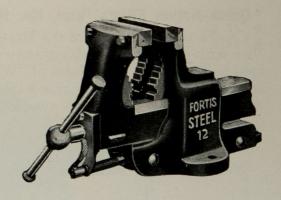
#### **COMBINATION TYPE**

For fixing at the end of the bench. Allows for tube fitting at right angles to normal position. Provided with small serrated jaws to accommodate tubes and bars up to 1" diameter in addition to the larger jaws for 4" diameter pipes. One size only.

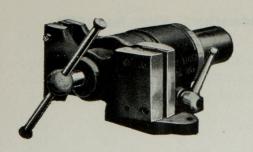
	N	0.	
1	21		

Width of Jaws 6"

£20 5 0



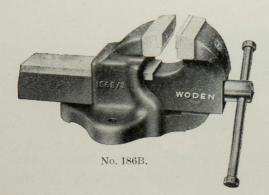
#### "VOLVO" TYPE



Suitable for heavy duty, accurate fitting and filing work. Vice is adjustable to any desired angle and obviates all unnecessary strain on operator. Curved jaw faces grip round surfaces up to  $4\frac{1}{2}$ " diameter. Two sizes.

No.	Width of Jaws	]	Each	
10/V	$4\frac{1}{2}''$	£16	6	0
12/V	6"	19	0	0

SMALL TOOL DEPARTMENT



#### WODEN BENCH VICES

#### Improved Mechanics' Vice No. 186B.

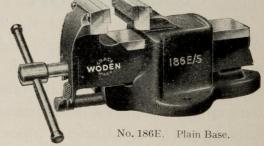
A dual-purpose vice fitted with unbreakable nut. Perfect alignment and rigidity provided under all stresses. Standard fibre jaws have vulcanised red fibre grips for delicate work; easily detachable. Hardened steel jaw plates are renewable and interchangeable.

	Width		Weight	Plain	Swivel
No.	of jaws	Opening	(approx.)	Base	Base
00	$2\frac{1}{4}''$	$2\frac{1}{4}''$	$5\frac{3}{4}$ lbs.	£1 3 6	£1 16 0
0	$2\frac{1}{2}''$	$2\frac{3}{4}''$	$7\frac{3}{4}$ lbs.	1 5 6	1 17 6
1	3"	$3\frac{1}{4}''$	$12\frac{1}{2}$ lbs.	1 12 0	2 6 0
2	$3\frac{1}{2}''$	4"	21 lbs.	2 5 0	3 2 6
3	4"	$4\frac{3}{4}''$	30 lbs.	2 19 0	3 19 6
4	$4\frac{1}{2}''$	$5\frac{1}{2}''$	42 lbs.	3 9 0	4 11 6
5	5"	$6\frac{1}{4}''$	52 lbs.	4 4 0	5 10 9
6	6"	$7\frac{1}{4}''$	66 lbs.	5 8 0	6 19 9
7	7"	$7\frac{1}{4}''$	68 lbs.	6 15 0	8 5 6

Add letter 'S' to vice number if required with swivel base.

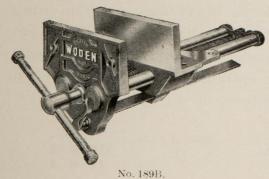
### Quick-Action Fitters' Vice, No. 186E.

Combines the features of the Mechanics' Vice with quick action. Accurately machined and finished. Jaw plates of "Woden" special hardened steel; renewable and interchangeable. Two types available, i.e., plain or swivel base.



No.	Width of jaws	Opening	Weight (approx.)	Plain Base	Swivel Base
5	$3\frac{1}{4}''$	$4\frac{1}{2}''$	34 lbs.	£3 19 0	£4 19 9
6	$3\frac{3}{4}''$	5"	49 lbs.	4 15 0	5 18 0
7	$4\frac{1}{4}''$	$6\frac{1}{4}''$	66 lbs.	5 14 0	7 1 0
8	$5\frac{1}{4}''$	7"	81 lbs.	6 11 0	8 2 6
8a	6"	8"	100 lbs.	7 3 0	9 4 0
9a	7"	9"	130 lbs.	9 1 0	3 4 0
10	8"	10"	204 lbs.	14 11 0	
	4 1 1 1 1 1	(0)			

Add letter 'S' to vice number if required with swivel base.

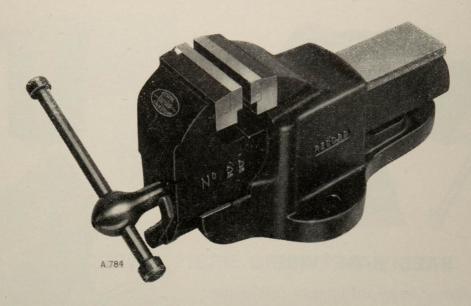


### Woodworkers' Vice, No. 189B, Quick-Action.

The original standard vice of the woodworking trades and educational authorities. Improved and stronger design.

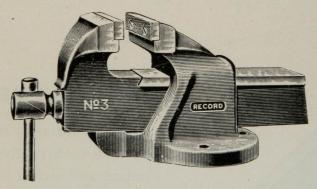
Width of jaws	7"	2 9"	$\frac{3}{10\frac{1}{2}''}$
Opening	8"	13"	$15^{\tilde{n}}$
Weight (approx.)		$31\frac{1}{2}$ lbs.	35 lbs.
Each, 189B	£2 16 6	£3 16 6	£4 4 0

SMALL TOOL DEPARTMENT



### **RECORD FITTERS' VICES**

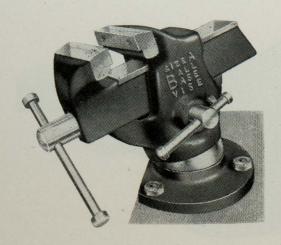
					ACII
Vice No.	Width of jaws	Maximum opening	Weight (approx.)	Swivel base	Stationary
21	$3\frac{1}{4}''$	4"	33 lbs.	£5 0 0	£3 19 0
22	$3\frac{3}{4}''$	5"	47 lbs.	5 18 0	4 15 0
23	41"	6"	62 lbs.	7 0 0	5 14 0
24	$5\frac{1}{4}''$	7"	80 lbs.	8 3 0	6 11 0
25	6"	8"	95 lbs.	9 8 0	7 13 0



### **RECORD MECHANICS' VICES**

				Eac	h
Vice No.	Width of jaws	Maximum opening	Weight (approx.)	Swivel base	Stationary
00	$2\frac{1}{4}''$	$2\frac{1}{4}''$	$5\frac{1}{2}$ lbs.	£1 14 0	£1 3 6
0	$2\frac{1}{2}''$	$2\frac{1}{2}''$	$7\frac{1}{2}$ lbs.	1 16 6	1 5 6
1	3"	31/	12 lbs.	2 5 6	1 12 0
2	$3\frac{1}{2}''$	4"	21 lbs.	3 2 6	2 5 0
3	4"	$4\frac{3}{4}''$	33 lbs.	4 2 0	2 19 0
4	$4\frac{1}{2}''$	$5\frac{1}{2}''$	42 lbs.	4 12 6	3 9 0
5	5"	$6\frac{1}{2}''$	56 lbs.	5 13 0	4 4 0
6	6"	8"	72 lbs.	6 19 0	5 8 0
7	7"	$9\frac{1}{4}''$	84 lbs.	. 8 6 0	6 15 0
8	8"	91"	90 lbs.	9 4 0	7 13 0

SMALL TOOL DEPARTMENT



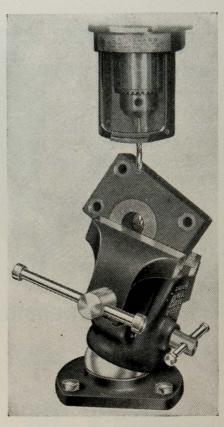
### BALL BASE VICE

Angular or awkward filing or machining can be executed with ease. Vice is securely locked by merely a turn of the hand. For tool room, die workers, precision workers, instrument makers, garage hands, etc.

W	idth
of	jaws
	4"

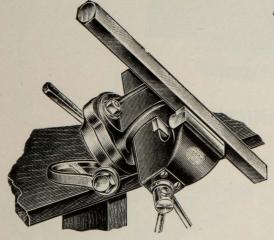
Depth of jaws  $1\frac{1}{2}''$ 

Opening 3"



Weight 16 lbs.

Each **£4 2 0** 

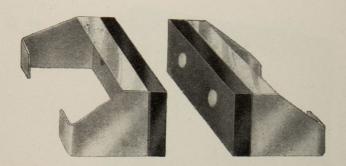


### **ALL-ANGLES VICE MOUNTINGS**

This mounting will perform a complete turn vertically or horizontally. Canting and swivel locks are instantly engaged. Can also be used without a vice by mounting work direct to swivel-top table and using as a jig fixture.

The use of a plate having tee slots enables larger work to be accommodated.

Size			Suits Vices with width of jaws				E Malle	ach	iron	
Small			$2\frac{1}{4}''$ to $3''$				£3	18	9	
Large			$3\frac{1}{2}$ " to 5"				6	17	9	
Large,	with top	plate	to accomodate	quick	action	vice	7	9	1	



### "RECORD" FIBRE GRIPS FOR VICES

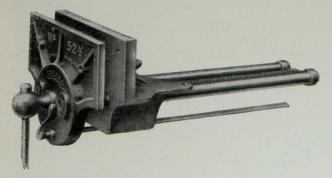
Steel construction. Fitted with special fibre faces. Fibre has a cushion face and is more durable than lead or copper.

Will fit any bench vice. The steel lugs bend round the vice jaws and secure grips in any position.

Enables delicate articles or highly polished surfaces to be gripped firmly without fear of damage. The fibre faces are renewable.

For vices with	jaws	Per	pair	For v	ices with j	aws	Per p	pair
$2\frac{1}{4}''$		 4	3		4"		 5	3
$2\frac{1}{2}''$		 4	3		$4\frac{1}{4}''$		 6	3
3"		 4	6		$4\frac{1}{2}''$		 6	3
31"		 4	6		5"		 7	3
$3\frac{1}{2}''$		 5	3		$5\frac{1}{4}''$		 7	3
$3\frac{3}{4}''$		 5	3		6"		 7	3

### "RECORD" WOODWORKERS VICES



Quick grip type, designed for high-class woodworking. Has continuous screw.

No.	Width of jaw	Maximum opening	Each		
52	7"	8"	£2	16	6
$52\frac{1}{2}$	9"	13"	3	16	6
53	$10\frac{1}{2}''$	15"	4	4	0